AMENDMENT TO THE CLAIMS

1. (Currently amended) A method of manufacturing a chip inductor comprising the steps of:

forming a conductive layer on an outer periphery of a substrate made of insulating material;

forming a coil by spirally cutting said conductive layer;

etching said coil;

forming an outer coating by coating at least said coil on said substrate with insulation resin; and

forming an electrode at both ends of said coil and making an electric contact between said electrode and said conductive layer,

wherein the step of forming an outer coating includes the step of using an electrodeposition method to deposit said insulation resin at least on a surface of a conductor of said coil, and

wherein the step of forming an electrode includes forming said electrode on said conductive layer formed on the outer periphery of said substrate with said insulation resin in between.

2. (Previously presented) The method of manufacturing a chip inductor according to claim 1, further comprising the steps of heating and curing said insulation resin, after using said electrodeposition method.

3. (Previously presented) The method of manufacturing a chip inductor according to claim 2, further comprising the step of cleaning prior to the step of heating.

4. (Previously presented) The method of manufacturing a chip inductor according to claim 2, wherein the step of heating comprises a first heating process for heating said insulation resin at a temperature lower than a curing temperature of said insulation resin, and a second heating process for heating said insulation resin thereafter at a temperature higher than the curing temperature of said insulation resin.

5. (Previously presented) The method of manufacturing a chip inductor according to claim 2, wherein the step of heating comprises a heating and filling process for heating said insulation resin at a temperature lower than a curing temperature of said insulation resin for filling a groove in said coil portion with said insulation resin, and a second heating process for heating said insulation resin at a temperature higher than the curing temperature of said insulation resin for curing said insulation resin.

6. (Previously presented) The method of manufacturing a chip inductor according to claim 4, wherein said first heating process is carried out at 130 °C, and said second heating process is carried out at 230 °C.

7. (Previously presented) The method of manufacturing a chip inductor according to claim 5, wherein said heating and filling process is carried out at 130°C, and said second heating process is carried out at 230°C.

8. (Previously presented) The method of manufacturing a chip inductor according to claim 1, wherein surfaces of said conductive layer formed on both end surfaces of said substrate are not in contact with an electrodeposition bath to maintain said surfaces free of deposition of said insulation resin.

9. (Previously presented) The method of manufacturing a chip inductor according to claim 1, further including an electric-field controlling process in said electrodeposition method, wherein said electric-field controlling process ceases application of an electric field before a thickness of said insulation resin coating said coil becomes greater than a thickness of said conductive layer formed on the outer periphery of said substrate.

10. (Previously presented) The method of manufacturing a chip inductor according to claim 1, wherein said insulation resin is epoxy-based resin.

11. (Canceled)

12. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein the step of forming an electrode further comprises forming said electrode from an end surface of said substrate to at least a portion that faces said conductor with said insulation resin in between.

13. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein the step of forming an electrode further comprises forming said electrode in a manner to locate between an end surface of said substrate and said conductor that constitutes said coil.

14. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein the step of forming a conductive layer further comprises forming a conductive layer also on both end surfaces of said substrate, and the step of forming an electrode further comprises forming an electrode on said conductive layer formed on the end surface of said substrate.

15. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein the step of forming a conductive layer includes leaving portions free of conductive layer by not forming said conductive layer on both end surfaces of said substrate, and a process of leaving portions free of electrode by not forming said electrode on said end surfaces of said substrate.

16. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein the step of forming an electrode further comprises forming said electrode in a manner that a thickness of said electrode formed on the outer periphery of said substrate is smaller than a thickness of said insulation resin formed on the outer periphery of said substrate.

17. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein the step of forming an electrode comprises forming said electrode by coating conductive resin and curing said conductive resin.

18. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein the step of forming an electrode comprises forming said electrode by coating conductive resin, flattening a coated surface by pressing it against a flattening plate after said conductive resin is coated, and curing said conductive resin thereafter.

19. (Previously presented) The method of manufacturing a chip inductor according to claim 11, wherein said electrode is formed in such a configuration that a length of said electrode located on the outer periphery of said substrate is larger than 1/6, but smaller than 1/2 of a dimension of said substrate, both said length and said dimension being taken along an axial direction of said coil.

20. (Previously presented) The method of manufacturing a chip inductor according to claim 1, wherein said conductive layer is formed on both end surfaces of said substrate, and wherein the step of forming an electrode further comprises cutting a surface of said conductive layer formed on both end surfaces of said substrate.

21. (Previously presented) The method of manufacturing a chip inductor according to claim 20, wherein in the step of forming an electrode, a cutting depth to cut the surface of said conductive layer formed on both end surfaces of said substrate is set to an extent not to expose both end surfaces of said substrate.

22. (Previously presented) The method of manufacturing a chip inductor according to claim 20, wherein in the step of forming an electrode, the surface of said conductive layer formed on both end surfaces of said substrate is cut with a laser irradiation.

23. (Previously presented) The method of manufacturing a chip inductor according to claim 22, wherein said laser irradiation is performed by scanning the surface of said conductive layer for a plurality of times.

24. (Previously presented) The method of manufacturing a chip inductor according to claim 20, wherein in the step of forming an electrode, the surface of said conductive layer formed on both end surfaces of said substrate and the surface of said conductive layer formed on an end portion of said outer periphery of said substrate are cut with laser irradiation.

25. (Previously presented) The method of manufacturing a chip inductor according to claim 24, wherein said laser irradiation is performed by scanning the surface of said conductive layer for a plurality of times.

26. (Previously presented) The method of manufacturing a chip inductor according to claim 1, wherein the step of etching said coil comprises electrolytic etching with application of an electric field between said conductive layer on the surface of said substrate and the electrolytic solution.

27. (Previously presented) The method of manufacturing a chip inductor according to claim 26, further comprising the step of forming an oxide film on the conductor of said coil on said substrate, after the step of etching said coil.

28. (Previously presented) The method of manufacturing a chip inductor according to claim 26, wherein the electrolytic etching is carried out while said conductive layer is kept in contact with an electrode plate for application of electric field.

29. (Previously presented) The method of manufacturing a chip inductor according to claim 26, wherein the electrolytic etching is carried out in a manner that said substrate having said conductive layer formed thereon is placed in an electrically conductive vessel, electric field is applied between said conductive layer and electrolytic solution through said vessel while said substrate is kept in contact with said vessel.

30. (Previously presented) The method of manufacturing a chip inductor according to claim 26, wherein the electrolytic etching is carried out so that a thickness of said conductive layer becomes larger than a width of the conductor of said coil.

31. (Previously presented) The method of manufacturing a chip inductor according to claim 1, wherein the step of etching said coil is a chemical etching process.

32. (Previously presented) The method of manufacturing a chip inductor according to claim 1, wherein the step of etching said coil is a chemical etching process with ultrasonic vibration.

33-36. (Canceled)